Lesson preparation book

Information & Communication Technology
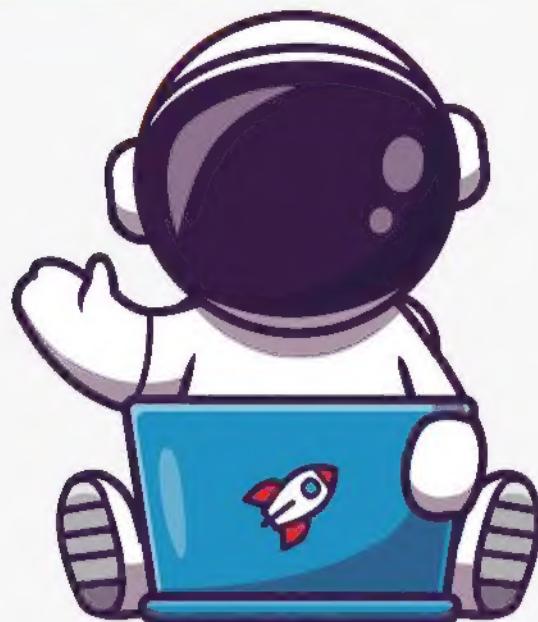
Fifth grade primary
First semester

Prepared and designed by: Mahmoud Yassin El Shafei

general and specific objectives

Information and Communication Technology for the fifth grade of primary school: general objectives

- Use of information and communication technology to share and record information.
- Awareness of basic concepts of computer components and common problems.
- Differentiate between the different types of networks and the progress of technology over time.
- Using computer networks to communicate in different ways and how to help people with special needs.
- Knowledge of basic concepts related to ICT tools.
- Learn how to organize information on a computer.
- Planning effective research by keywords.
- Share information using spreadsheets.
- Gaining experience to protect personal information and data.
- Awareness of copyright concepts.
- Use of multiple reliable sources.
- Editing, quoting and citing from various sources on the Internet.

Special objectives

- Give examples of how information is shared.
- Define methods for recording information.
- communicate and exchanges information with his colleagues through educational platforms.
- Describe common computer problems.
- Explain how to solve some common computer problems.
- Explain what a network is.
- Describe the different types of networks.
- Explain the evolution of communications in the computer so far.
- Describe the different ways in which computer networks can be used to communicate.
- Explain basic scientific concepts related to ICT tools.
- Explain how computer networks can help us in our daily lives.
- Describe what File management is
- Describe common problems in the field of information and communication technology.
- Develop solutions to ICT problems.
- Explain how following specific steps helps to discover and fix problems.
- Describe different types of accessories for electronic devices.
- Show how to organize information.
- Explain how effective search planning helps in accessing information on the Internet.
- Discuss how the use of keywords and subtopics helps enhance the accuracy of search results.
- Explain effective strategies when searching on the Internet and recording results.
- Discuss when he might decide to publish information online.
- Explain how to share information using spreadsheets.

Lesson(1)

Explorer in action

Strategy

Problem Solving

Critical thinking

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Give** examples of how information is shared.
- **Identify** methods for recording information.
- **Communicate** and share information with his colleagues through educational platforms.

"Preface"
What challenges do you face when making a virtual call over the Internet?

Accompanying activities

Take the students to the computer room and ask them the introductory question and discuss the answers with them and show them the video (The Search for the Lost Palace) and through it we deduce the tools that Fred Hebert uses to communicate and share information with his students.

View Lesson

Tools used by (Fred Hebert) in his daily work:

- word processor in writing reports.
- Spreadsheet program (Excel) in graphs and their expression.
- Presentation Program (PowerPoint)
- E-mail to communicate officially
- (whatsapp - zoom) programs for making virtual meetings.

Evaluation:

For official communication, Fred Hebert uses ....

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Lesson(2)
Computer peripherals

Strategy

Problem Solving

Critical thinking

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

• **Explain** the basic concepts of tools attached to the computer.

• **Describe** common computer problems.

• **Explain** how to solve some common computer problems.

"Preface"
What challenges do you face when making a virtual call over the Internet?

Accompanying activities

Take the students to the computer room and ask them the introductory question and discuss the answers and show them the basic peripherals of the computer with some common problems and ways to solve them through a presentation.

View Lesson

PC peripherals:

• Flash Memory Flash Memory.

• Ethernet Cable.

• Ethernet port.

• Router.

• External Hard drive.

• High Definition Multimedia Interface (HDMI).

Measuring of Storage units :

(terabyte - gigabyte - megabyte - kilobyte - byte - bit)

The measurement unit for communication speed: megabytes per second, Mbps.

Processor speed unit: GHz.

Common computer problems see the book

Evaluation: The processor speed is measured by the ....

Lesson (3)
Networks

strategy

Critical thinking

Cooperative Education

Lesson objectives

By the end of this lesson the student will be able to:

- **Explain** the nature of the network.
- **Describe** the different types of networks.
- **Explain** the evolution of communications in the computer so far.

"Preface"
What does the word network mean to you?

Accompanying activities

Take the students to the computer room and ask them the introductory question and discuss the answers with them. I make a presentation explaining the concept of the Internet and networks and their types, discussing these types and their common characteristics, and linking the topic to their daily lives.

View Lesson

Internet :

It is a network that connects computers and people who use that network from all over the world. To connect the computer to it, you need a gateway (router) (and an ISP provider).

World Wide Web WWW: It is an acronym (WORLD WIDE WEB), which is part of the Internet and consists of web pages that can be navigated between them.

Intranet:

A private network limited to a group of people that connects them together, such as a school network.

closed network:

It is closed as in the computer lab at the school by connecting with cables while allowing file sharing.

Evaluation: WWW is an abbreviation for ....

Lesson (4)

Digital communication tools

Strategy

Critical thinking

Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

• **Describe** the different ways in which computer networks can be used to communicate.

• **Explain** basic scientific concepts related to ICT tools.

• **Explain** how computer networks can help us in our daily lives.

"Preface"

What is the difference between face-to-face communication and virtual communication?

Accompanying activities

Take the students to the computer room, ask them the introductory question, discuss the answers, and make a presentation explaining the concept of the Internet of Things, Bluetooth technology, and the role of networks in the lives of people with disabilities.

View Lesson

The Internet of things :

Consists of devices connected to the Internet via WiFi, which you can control remotely. Such as Bluetooth speakers and digital home appliances (refrigerator - washing machine) through a specialized application.

Bluetooth:

A network technology that connects wireless devices over a short range to form a network for transmitting data between different devices.

Advantages of using networks for people with disabilities:

• Bluetooth speakers.

• Screen readers for audio feedback.

Evaluation: Mention a home appliance that can be connected to the internet?

strategy

Problem Solving

Critical thinking

Lesson (5)

Internet connection problems and how to solve them

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

• **Describe** common problems in the field ICT .

• **Develop** solutions to common ICT problems.

• **Explain** how following specific steps helps to discover and fix problems.

"PREFACE"

What problems did you encounter while using ICT tools and how did you solve them?

Accompanying activities

Take the students to the computer room and ask them the introductory question and discuss the answers with them and then ask them a specific problem (internet outage) and ask for their suggestions to solve the problem and show them through a presentation the steps to be followed to help solve computer problems with some common problems and how to solve them.

View Lesson

Troubleshooting steps:

1 - Determine the problem (from the computer or from the software).

2- Think of different ways to solve the problem.

3- Studying potential solutions and testing them until one of them succeeds.

4 - Learning while solving the problem to increase experience.

5- Seek the help of the teacher or a family member if you do not find a solution to the problem.

PC problems and their potential solutions

the problem	Possible solutions
My computer is slow when I open an app	Shutdown and restart the computer, check for software updates, and delete unwanted programs.
The search engine is running slow	Check wi-fi connection, check for updates of apps on your device
No internet connection	Use software to troubleshoot wi-fi connection problems Make sure the router is connected Reboot the router Try a new Ethernet cable Contact the customer service of the company that gives you your Internet service provider (ISP) for help.
slow loading	Restart your computer and router and check your internet speed

Evaluation: There are no organized steps to discover and find solutions to Internet use problems ( )

Lesson (6)

digital file management

strategy

Critical thinking

creative education

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

• **Describe** different types of electronic device Peripherals.

• **Describes** what file management is.

• **Explain** how to organize information.

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation showing new computer accessories and a practical demonstration showing how to manage files on the computer.

View Lesson

Scanner: A machine used to enter images and graphics into the computer, as it converts them from their graphic nature to a digital image in order to suit the nature of the computer and to facilitate storing them in a file and calling them when needed.

Digital camera: It is an electronic imaging camera that takes pictures and stores them electronically, some of which can record audio or video in addition to pictures.

QR Code: Think of it as a simple container that stores information. You can scan QR codes online using the camera on your smartphone. Simply point your smartphone camera at the QR code and it will be recognized automatically.

a) Create a home folder:

1 - Right-click on the place where you want to create the folder.

2 - Choose the new command. 3 - Choose the command folder.

b) Add a subfolder inside the main folder

c) Renaming the folders to suit their content and type.

Evaluation: It is preferable to organize file addresses and store them in files according to their content ( )

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lesson (7)
Information search strategies

strategy
Critical thinking
Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

Explain how effective search planning helps in accessing information on the Internet

• **Discus** how the use of keywords and subtopics helps in enhancing the accuracy of search results.

• **Explain** effective strategies when searching on the Internet and recording results.

"preface"
What strategies do you use when searching for information on the Internet?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining the importance of planning in the research process and the suggested steps when searching online.

View Lesson

The Internet contains a huge amount of information, so during your search, you should:

• Plan your research, analyze the information you find, and verify it critically.

• Accurately define the information you seek to access.

• Choose keywords carefully, as it is not recommended to use complete sentences.

• Evaluate, select, and organize the primary information that you find during your search on the Internet.

• Collaborate with your classmates while building knowledge.

• Divide the research topic into smaller subtopics.

• Share your results and organize them for a presentation.

Evaluation: ....contains a huge amount of information and data in various fields.

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lesson (8)

Share information

strategy

Critical thinking

Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Discuss** when it may decide to publish information on an intranet.
- **Discuss** when he may decide to publish information on the Internet.
- **Explain** how to share information using spreadsheets.

"preface"

When can you decide to share information over the internet?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining the difference between participation on the Internet and intranet, with a practical demonstration and application of using the Excel program and introducing it.

View Lesson

Share information:

The Internet is used to share information over the World Wide Web and is less secure.

The intranet is used to share information over a closed network and is more secure.

Microsoft Excel: It is a workbook with the default name (book1), and each book consists by default of (3) worksheets, and it can be added and deleted. The worksheet consists of columns (columns) and rows (rows) and the result of the intersection of columns with rows is called (cell), the cell can contain texts, numbers or equations.

Column Title: Each column has a title consisting of letters that appear at the top of the column.

Row title: Each row has a title consisting of numbers that appear to the left of the row.

Cell address: consists of the column address followed by the row number.

Active cell: It is the selected cell that has been selected. Its solution appears as a black frame, and its title appears in the formula bar above the column headings.

Excel features:

It includes many formulas and functions that help in performing arithmetic operations.

It represents data in the form of a graph in different formats.

Activity (1) Practical: Arrange the information alphabetically.

Activity (2) Practical: Steps to create a simple formula for addition in a cell.

Evaluation: A cell in Excel can contain ....

Fifth grade lesson preparation book

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strategy

Performance

based Evaluation

review

The first theme

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

• **confirm** the information, meanings and knowledge acquired in the first theme.

• **divide** the subject into units of study that are easy to review and retrieve.

• **Solve** as required by the questions in the first theme.

"preface"
What are the main topics of the first theme?

View Lesson

First write and compare:

Write a sentence explaining the link between each of the following pairs of phrases, then compare your sentences with those of your colleague.

1 - Networks and the Internet of Things.

2 - Folder and file.

3- Opinion poll and chart.

Second, read and answer:

1 - How does Fred Hebert share information?

2 - What can happen if you open too many apps at the same time?

3 - Give an example of a computer network.

4 - Share a way you can use computer networks to communicate.

5- What is meant by following a particular procedure?

Solve the rest of the textbook questions.

Lesson 9

EXPLORER IN ACTION

Strategy

Problem Solving

Critical thinking

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Explain** the importance of copyright protection.

- **Plan** a photography expedition.

- **Identify** some technological problems and how to solve them.

"Preface"

How do you plan for a trip to a different city? What do you take with you?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a video presentation of the explorer Jeff Kirby and the techniques he uses and what he does to avoid the failure of these techniques.

View Lesson

Copyrights : Owning the images means having the copyright or a legal right to publish or sell the images.

Copyright Violation: Some people's use of photographs taken by others without their permission or without purchasing the right to use the photographs.

How to protect the copyright of images:

- Putting a watermark or related information such as the copyright name on the image.

- Do not share high-resolution images except with people you trust.

- Search through images to see if any image is used without permission.

Violation of copyright in law: Egyptian law stipulates the state's obligation to protect intellectual property rights of all kinds in all fields, and it establishes a specialized body to take care of these rights and their legal protection.

Evaluation : What advice would you give a friend who wants to share a photo they found online?

Lesson 10
Protecting ourselves and our information

Strategy

Critical thinking

Cooperative Education

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Describe** the importance of protecting personal information
- **Describe** the importance of backing up data.
- **Explain** ways to protect personal information and data.

"preface"
Why is it important to protect the data on a computer or other device?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining how to protect personal data.

View Lesson

Personally Identifiable Information:

Like your name, address, date of birth and your passwords, hackers try to get them to send viruses or steal your money.

Ways to protect your personal information:

- Limit the information you share online.
- Not to subscribe to sites that require a lot of information.
- Use a strong password consisting of letters, numbers and symbols.
- Use an anti-virus program and update programs constantly.

Ways to protect your personal files:

By creating a backup copy of your files and saving them to an external hard disk or flash memory, the external hard disk is larger and faster than a flash memory.

Evaluation :

How can using a weak password affect you?

Lesson 11

Password security

Strategy

Critical thinking

Dialogue and discussion

Date

Class

per

"preface"

How many passwords do you use? And how strong is it?

Lesson objectives

By the end of this lesson the student will be able to:

- **Understand** the importance of password protection.
- **Explain** the purpose of a password manager.
- **Discuss** how to use multi-factor authentication to protect your data and accounts.

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining the reasons for protecting passwords, their management programs, and multi-factor authentication.

View Lesson

Password protection reasons: You have to protect your password so that you do not fall victim to phishing, which is sending a message to you via mail or social media with attachments, and when you open it, the hacker steals your data. Smishing is the same concept, but via text messages.

Password management software: These programs are used to create strong passwords for you and help you to keep them and see if they are weak and can be stolen or not.

Multifactor authentication: You can strengthen and strengthen your passwords with multi-factor authentication, which means offering at least two ways to identify yourself. Such as a password or a personal identification number (PIN) and another factor that you own, such as an email or a one-time code. Therefore, you cannot access your account until after completing the two-step authentication.

Evaluation : Mention examples of phishing scams that you have heard about or seen?

Lesson 12
How to deal with fake websites

Strategy

Critical thinking

Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Discuss** what scam websites are trying to accomplish
- **Explain** how to avoid scam websites.
- **Identify** people or organizations to whom you can **report** problems with websites.

"preface"
What would be something that is too good to be true for you?

Accompanying activities

Take the students to the computer room and ask them the introductory question with displaying some fake advertisement messages to win a specific purpose and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining how fraudulent sites work and how to avoid them.

View Lesson

scam websites: Some websites are scam . They can be phishing sites that include fake situations in an attempt to get your data. Fake shopping sites and scare ware sites that include fake warnings of computer problems or scam sweepstakes that offer a bonus you never get

How scam sites work:

· It is trying to lure you, as it seeks to arouse your enthusiasm and draw your attention.

· Then you try to penetrate your privacy by obtaining your personal information.

· Badly exploiting the information you have obtained.

How to avoid scam websites:

Always check the website address (URL).

Check for spelling or grammatical errors in messages.

Do a site search online to see if the site is scam.

In the event that you are a victim of one of these websites, you must inform the guardian, call the Child Helpline, and inform the General Department for Combating Internet Crimes. Inform the service provider and the bank you deal with in this regard.

Evaluation: Why is it important to report scam websites?

Lesson 13
Intellectual property rights

Strategy

Brainstorming

Critical thinking

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Understand** what copyright means.
- **Respects** the law when using. information, devices, and networks.
- **Identify** when I need to attribute a creator's work.

"preface"

What do you think if someone takes your work and publishes it online without your permission?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining the concept of copyright and digital content

View Lesson

Copyrights : The international symbol of copyright is the letter C with a circle around it ® and it covers many types of creations and works such as written content, images, movies, games, computer software and websites.

Works not covered by copyright:

· Businesses classified as public property.   . Facts, facts and discoveries.

· Creative works that have passed 50 years after the death of their owner.

Written content: When preparing your research, it is permissible to use only a small part of the writings of the person who will be quoted, and it can be transferred as it is or reformulate ideas with the names of the author in both cases.

Pictures : When using it, mention its title, and the name of the painter or photographer, and you can create your own pictures.

Public domain and creative commons:

Creative Commons is defined as giving a creative work owner permission to reproduce their work at any time and anywhere, and your search results can be filtered online so that you can filter your results to show images that have a public license.

Evaluation: Why do so many people think it's okay to reuse photos they found online?

Lesson 14
Using digital sources

Strategy

Critical thinking

Cooperative Education

Lesson objectives

By the end of this lesson the student will be able to:

- **Use** ICT tools and sources to support decision-making processes.
- **Differentiate** between opinions and facts in different sources.
- **Explain** the different kinds of sources that can be used to conduct online research.

"preface"

What are the characteristics of a reliable online source?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation explaining the use of reliable sources and what facts and opinions are and their sources.

View Lesson

Reliable sources: When conducting an Internet search, you should consider identifying reliable digital sources by directing to type the required URL, which is the Uniform Resource Locator in the search engine, and follow the sites suggested by your teacher such as the Egyptian Knowledge Bank. These sites are often stored in a bar Bookmark bar in your browser.

Facts: They result from research and observation and can be proven, and facts do not bear controversy.

Opinions: They are based on a person's views and experiences, and they cannot be proven, but they are subject to controversy.

Using multiple sources and facts:

- Use more than one site to collect the same information.
- Write notes from one source and review them from another source.
- Make sure that the information is based on facts and not on opinions.
- Use maps and charts to obtain measurable facts.
- Use research materials, books and articles in the Egyptian Knowledge Bank.

Evaluation: What are some facts and opinions you have heard recently?

Lesson 15
Advanced searches

Strategy

Critical thinking

Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Choose** specific and accurate online search terms.
- **Use** search engines and advanced searching tools.
- **Identify** online sources that meet my research needs.

"preface"

Worldwide, how many internet searches do you think are completed every day?

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation showing how to search in specific and precise terms, logical factors and search rates.

View Lesson

To get accurate and specific search results, you must:

- Determine your topic and research questions.
- Use keywords (KEYWORDS) to search on the Internet.
- Use synonyms to increase the accuracy of your search words.
- Using SEARCH STRING to narrow the results. • Use quotation marks to get a specific result.
- Use search engine suggestions and advanced tools to narrow results to specific domains such as .EDU or .GOV

Boolean operators and search modifiers:
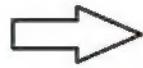
AND – Results will include both terms. Example: video games and teenagers	" " – Results will include the exact terms. Example: "video games"
OR – Results will include either term. Example: child or teenager	( ) – Results prioritize what is in parentheses. Example: (video games) teenagers
NOT – Results will not include the terms. Example: video games not online	* – Results will include all forms of a word. Example: teen*

Search results: Check the search results and search for titles related to your topic and facts that answer your questions and click to open and read them quickly and choose the sources that match the most.

Evaluation: Why would you use a domain-specific search result like .EDU, .GOV

Fifth grade lesson preparation book

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Lesson 16
Documenting information appropriately

Strategy

Critical thinking +

Dialogue and discussion

Date

Class

per

Lesson objectives

By the end of this lesson the student will be able to:

- **Explain** how to take notes and paraphrase online content.
- **Identify** the reasons for quoting online content and how to do it.
- **Explain** how to cite online sources.

Accompanying activities

Take the students to the computer room and ask them the introductory question and ask them to discuss in pairs and then present their findings to the other groups and discuss them in it, with a presentation showing how to take notes, paraphrase the text, use quotes and cite sources.

View Lesson

taking notes :

- Take notes in your own words. • Add the URL in the notes.
- Review the notes and make sure that there is no missing information.
- Use quotation marks (" ") to memorize important words.

Paraphrasing the text:

- Use your own style of explanation.
- Change some vocabulary with the order of ideas and the construction of sentences.

Using quotes: Quotations support your ideas and evidence. When quoting, you must specify the source and the reason for use, and they can be used as sentence starter prefixes to share information.

Citing sources: At the end of your research report, your sources are listed on the cited works page. Permalinks can be used to point to the cited site, whether it's a website or a YouTube source.

Evaluation: What is the link between reformulating texts and copyright law?

review second theme

Date

Class

per

"preface"

What are the most important topics of the second theme?

Lesson objectives

By the end of this lesson the student will be able to:

• **prove** the information, meanings and knowledge acquired in the second theme.

• **divide** the subject into units of study that are easy to review and retrieve.

• **Solve** according to the questions in the second theme.

View Lesson

a) Write and compare:

Write a sentence for each of the following pairs of phrases to explain the connection between them. Then compare your sentences with the sentences of a colleague.

1. Personally Identifiable Information and Phishing.

2. Harmful content and reliable sources.

3. Copyright and documentation.

3. Copyright and documentation.

b) review questions:Read and answer:

What is meant by personal data?

Mention three ways to maintain the security of your personal information on the Internet.

Give an example of multifactor authentication.

What actions should you take if you think that a personal page on the Internet is fake?

Why would you add a quote to a research paper?

Mention two reasons for using multiple sources in your research?

How can you ensure that you get the most accurate result from the search process?

How should the paraphrased text differ from the original text of the author or writer?

Solve the rest of the textbook questions